Integrating Parts Management into
Systems Engineering

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PMR IPT Findings

"Acquisition environment lacks adequate emphasis on parts management/standardization at the DoD level"

"Systems Engineering discipline currently lacks parts management/standardization focus"

"Most DoD programs do not address DoD level parts management/standardization"

Donna McMurray, DSPO
"DoD Parts Management Reengineering" status briefing presented at Defense Standardization Conference
25 May 2006

SSE Views on Parts Management

Parts Management should be

- Part of the program's technical planning and included in the Systems Engineering Plan (SEP)

- A design consideration as part of the SE process - a derived requirement

- Reflected in staffing approach

- Part of the technical baseline definition (functional, allocated, and product baselines)

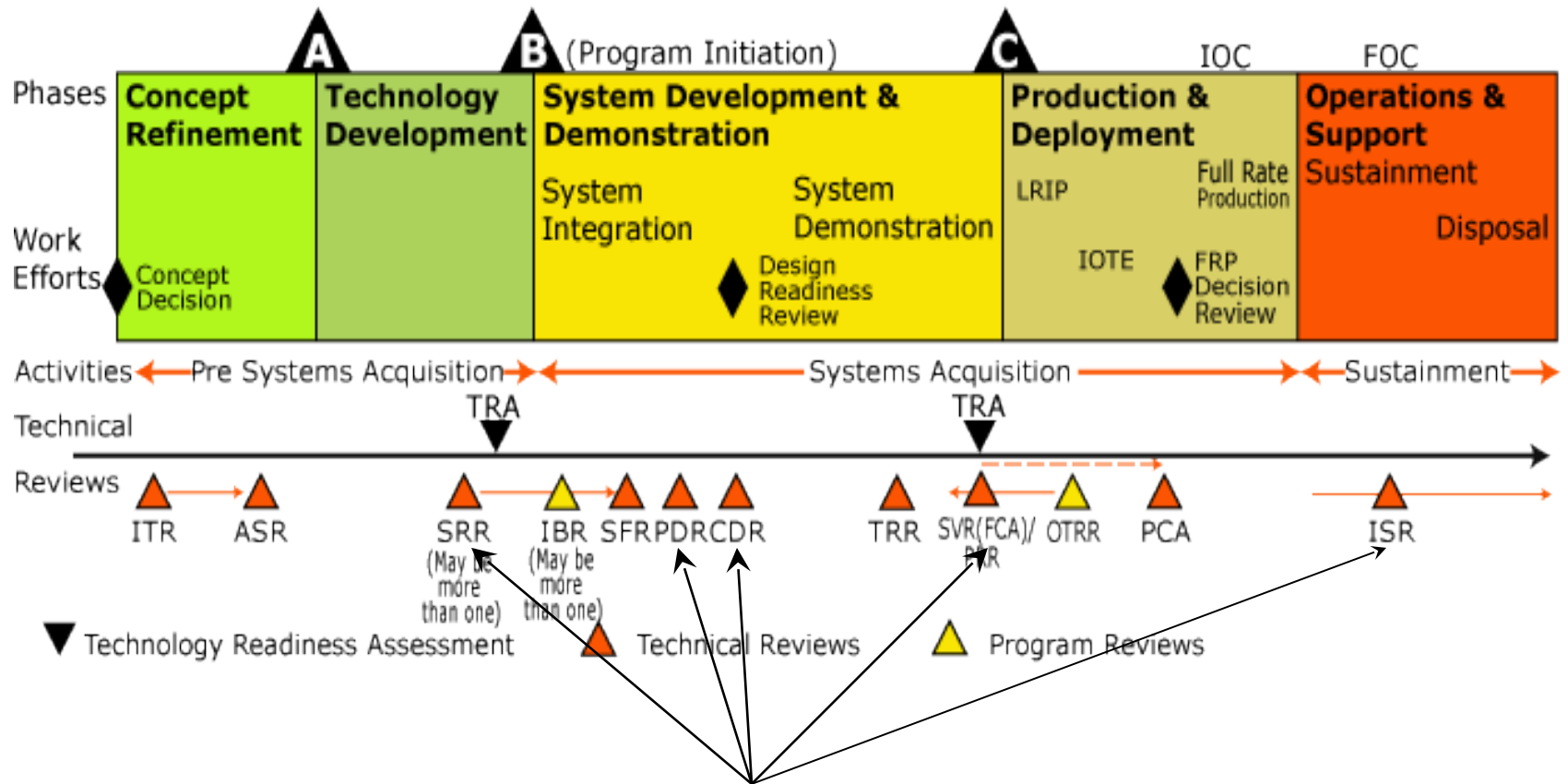- Included as technical review risk assessment and exit criteria

Parts Management techniques in systems engineering
- Include logistics considerations up front
  - Anticipate Diminishing Manufacturing Sources and Material Shortages
  - Adapt to common support equipment
  - Provide incentive to primes and lower tiers through the contract to use parts already in DoD system that meet requirements (i.e. reliability, affordability)
  - Avoid material that could wind up to be in short supply; Use trusted sources
  - Avoid manufacturers that could possibly go out of business
- Include production engineers up front
- Establish metrics (e.g., minimize # of unique parts) to encourage use of standard parts, when warranted
- Use SE trade studies to balance life cycle cost, availability, reliability and other design considerations

Program Technical Reviews

Part Management is an important design consideration

Related SSE Initiatives and Contributions

- **Defense Acquisition Guidebook (DAG), Ch 4 (Systems Engineering) (*http:www.acq.osd.mil/se/publications.htm*)**
  - Update to include Parts Management as a Design Consideration
  - Draft of proposed changes being coordinated through PMRIPT SE working group
- **Risk Assessment Checklists (refer to Technical Review CLE003 at (https://learn.dau.mil/html/clc/Clc.jsp)**
  - Update to include Parts Management considerations
  - Will be coordinated with PMRIPT SE when available
- **Defense Acquisition Program Support (DAPS) Systems Engineering Assessment Methodology**
  - Evaluating current set of questions and criteria to ensure that Parts Management is adequately considered
- **Consideration in Technical Planning (SEP)**
- **New Parts Management CLM**
  - Review and comment to ensure integration with Systems Engineering
- **Life Cycle Cost Savings Through Parts Management, SD-19 Update**
  - Review and comment to ensure integration with Systems Engineering

Proposed DAG Ch 4 Changes to Address Parts Management

➢ An overview of the goals of Part Management
  • Reduce logistics footprint and total life cycle costs
➢ What a part is and its relationship to other system elements and configuration items
➢ Brief discussion of fundamental SE processes that support Parts Management
  • Configuration management, technical assessment, decision analysis, design solution, implementation, verification and technical reviews
➢ Suggested elements for creating a part management program that
  • Leverages fundamental SE processes
  • Documented in Systems Engineering Plan
➢ Reference new MIL-STD-PARTSMGMT, SD-19, and industry guides for additional implementation details

Summary

➢ ODUSD (A&T)/SSE actions to ensure Parts Management becomes more integrated with systems engineering and acquisition program oversight

- Incorporation into Systems Engineering portion of Defense Acquisition Guide
- Inclusion in Risk Checklists for consideration at Technical Reviews
- Inclusion as consideration in Technical Planning
- Inclusion in DAPS methodology for Program Support Reviews